AFCTN Test Report 93-045

AFCTB-ID 92-090
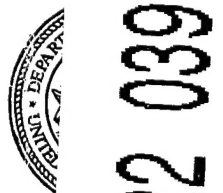
19960822 039

Technical Publication Transfer

Using:

Northrop Corporation's Data

MIL-M-28001A (SGML)
MIL-R-28002A (Raster)
MIL-D-28003 (CGM)

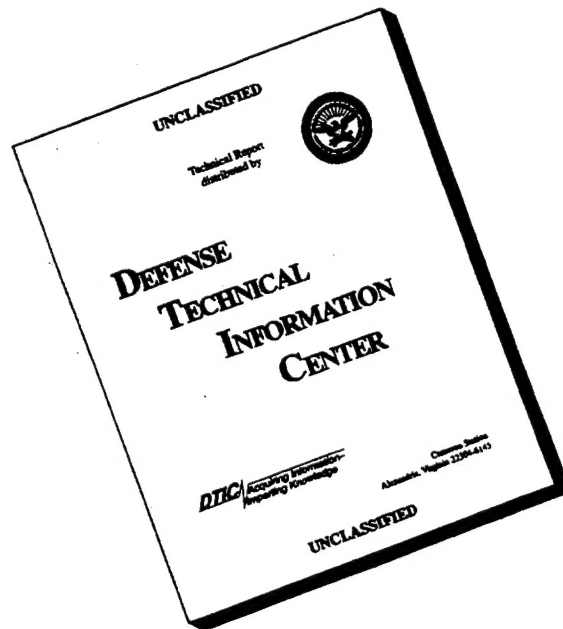# Quick Short Test Report

18 December 1992

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MIL-D-28003 (CGM)

Quick Short Test Report

18 December 1992

Prepared By
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Contents

1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and appliations used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participantion in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reprts (QSTR) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Northrop Corporation's interpretation and use of the CALS standards in transferring technical publication data. Northrop used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 92-090

**Date of
Evaluation:**   18 December 1992

Evaluators: George Elwood
                         Air Force CALS Test Bed
                         DET 2 HQ ESC/ENCP
                         Suite 300
                         4027 Colonel Glenn Hwy
                         Dayton OH 45431-1672

Data Originator: John Kent
                         Northrop Corporation
                         B-2 Division
                         L591/GK
                         8900 E. Washington Blvd
                         Pico Rivera CA 90660

**Data
Description:**   Technical Manual Test
                              2 Document Declaration files
                              2 Document Type Definitions (DTD)
                              2 Text files
                              2 Formal Output Specification Instances (FOSI)
                              2 Raster files
                              8 Computer Graphics Metafile (CGM) files

Data Source System:

                         Text/Standard Generalized Markup Language (SGML)

                              HARDWARE
                                      Unknown
                              SOFTWARE
                                      Unknown

                    Raster

                              HARDWARE
                                      Unknown
                              SOFTWARE
                                      Unknown

CGM

    HARDWARE
        Unknown
    SOFTWARE
        Unknown

Evaluation Tools Used:

    MIL-STD-1840A (TAPE)

        SUN 3/280

            AFCTN *Tapetool v1.2.8 UNIX*
            XSoft *CAPS/CALS v40.4*

    MIL-M-28001 (SGML)

        SUN SparcStation 2

            XSoft *CAPS v6.0x*
            ArborText *ADEPT v4.2.1*
            SoftQuad *Author/Editor v2.1*

        Cheetah Gold 486

            Exoterica *XGMLNormalizer v1.2e3.2*

    MIL-R-28002 (Raster)

        SUN SparcStation 2

            ArborText *g42tiff*
            AFCTN *validg4*
            AFCTN *calstb.475*
            IGES Data Analysis (IDA) *IGESView v3.0*
            Island Graphics *IslandPaint v3.0*
        Cheetah
            Inset Systems *HiJaak v2.02*
            Corel *Ventura Publisher*

    MIL-D-28003 (CGM)

        SUN SparcStation 2

            ArborText *cgm2draw*
            Island Graphics *IslandDraw v3.0*

Cheetah Gold 486

> Advance Technology Center
>   (ATC) *MetaVIEW R v1.12*
> ATC *MetaCheck R 2.05*
> Software Publishing Corporation
>   (SPC) *Harvard Graphics v3.05*
> Inset Systems *HiJaak v2.02*
> Corel *Ventura Publisher*

Standards
Tested:

MIL-STD-1840A
MIL-M-28001A
MIL-R-28002A
MIL-D-28003

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) en-
closed in a box in accordance with ASTM D 3951. The exte-
rior of the box was marked with the magnetic tape warning
label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by
MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel
showed the label indicating the recording density, as re-
quired by MIL-STD-1840A, para. 5.3.1. Enclosed in the box
was a packing list showing all files recorded on the tape.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-
STD-1840A files. The files were named per the standard
conventions.

3.2.1 Tape Formats

The tape was run through the AFCTB *Tapetool v1.2.8* utility.
Nine errors were encountered while evaluating the contents
of the tape labels. Eight were "Invalid block size
encountered" errors, and one relates to use of a space not
permitted in the ANSI standard.

All eight CGM files were reported as having the wrong block
size. MIL-D-28003, para. 3.1.4 requires the block size of
CGM files be 800.

```
D001C004              CGM                    F/00080 02000/000003  Extracted
*** ERROR (MIL-D-28003; 3.1.5) - Invalid Block Size:
    Header => 02000, Expected => 800
```

An error was reported in the use of reserved spaces. Al-

though this was a reported error, a check of the file found nothing displayed in this area. This is a bug in *Tapetool* which will corrected in the next release.

                    vvvvvvvvvvvv
VOL1ITDS01   CONTROLLER   4

*** ERROR (ANSI X3.27; 8.3.1.1) - Columns 12-24 are reserved
    for future standardization and must be spaces.

The physical structure of the tape does not meet the CALS MIL-STD-1840A requirements.

3.2.2 Declaration and Header Fields

There were no reported errors in the Document Declaration files or data file headers.

4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included on this tape.

5. SGML Analysis

This tape contained two DTD and two Text files. Both DTD files were evaluated using Exoterica's *XGMLNormalizer*. The first time through file D001G001, 18 errors were reported. A review of the error log and the DTD showed that the notation reference for the CGM files was missing. When this was added the errors dropped to eight.

<!NOTATION cgm PUBLIC "-//USA-DOD//NOTATION Computer Graphics Metafile//EN">

When the second DTD was evaluated, the first pass generated ten errors. Two of these errors were due to a missing no- tational reference to the Raster files. When this was added, only eight errors were reported. It was also noted

that the Raster files were identified with "ras" instead of
the correct "fax" per MIL-M-28001A.

```
<!NOTATION ras PUBLIC "-//USA-DOD//NOTATION CCITT Group 4 Facsimile//EN" >

<!ENTITY test1.ras SYSTEM NDATA ras>
<!ENTITY test2.ras SYSTEM NDATA ras>
```

The eight errors in both DTD were the same. The use of
identifier that have not been defined was noted. The first
error relates to "FSIDREF". The DTD comment indicates that
this references the FOSI. This has not been defined in the
DTD or ISO 8879.

```
465  branchstyleid  FSIDREF          #REQUIRED

500  doc            EXIDREF          #IMPLIED
```

The SGML does not meet the CALS MIL-M-28001A specification.

6. Raster Analysis

Both Raster files were checked using the AFCTN *validg4* util-
ity. This program reported that the first file, D002R004
was a valid type I Raster image. The second file was re-
ported as a type II Raster image which *validg4* can not
parse. This type II file is the first one received in the
AFCTB. Currently the AFCTB does not have any tools which
will convert and display type II Raster files.

The type II Raster file was sent to the AFCTN Raster expert
at Lawrence Livermore National Laboratory (LLNL) for evalua-
tion. Here are his comments:

"Although I was able to successfully display the image, a pass through
the OADTOOL parser indicated several errors:

1. Several basic parameters were specified as non_basic, under
non_basic_document_characteristics in the document_profile: a.
nominal_page_size b. pel_path d. line_progression c. pel_spacing

2. In the layout_object, the page_position attribute was not coded correctly.

3. In the content_portion_ attributes, the tiling_offset values were not encoded correctly.

There may be some understandable confusion on the basic parameter issue since National Technical Information Service (NIST) is handing out examples with the basic values coded in the non_basic_doc_characteristics. The rational for this was to demonstrate the structure of non_basic parameter encoding, but with a standard size test image, the actual data would be basic.

After the participant reprocessed the Type-II document, it should have been returned without the inappropriate non_basic parameters."

Both Raster images were checked using the AFCTN *CALSTB.475* utility. The first images could be displayed. The image was scanned in correctly without a noticeable angle. A few orphan pixels were noted on the image. The type II Raster image could not be read into *CALSTB.475*.

File D002R004 was converted using Rosetta Technologies' *Prepare* without a problem. The resulting file was viewed and printed using *Preview*. The type II file generated an error message and did not convert.

File D002R004 was converted using the ArborText's *g42tiff* utility and imported into Island Graphics' *IslandPaint* without a reported problem. The type II file generated an error message and could not be converted.

File D002R004 was imported directly into IDA's *IGESView* without a reported problem. The image displayed and printed correctly. *IGESView* could not handle the type II Raster file.

Both files were converted to an IMG format using Inset Systems' *HiJaak*. No errors were reported during this procedure. The resulting files were read into Corel's *Ventura Publisher*. The type II files, although converted, were not usable. See the Appendix for a hard copy.

File D002R004 was found to meet the CALS MIL-R-28002A specification. File D002R005 is a type II Raster file which can not be processed using current available tools in the AFCTB.

7. CGM Analysis

The first document contained eight CGM files. All files were evaluated using ATC's *MetaCheck* with CALS options. This utility reported that all files with the exception of D001C010 met the CALS MIL-D-28003 specification. All files reported one basic error relating to background color definition.

Bulletin 20024: Element Class/ID: 5/34   Offset: 246 octets Element No. 20
Warning; the definition of color index 0 differs from the
explicitly defined Background Color.

Files D001C006 and D001C008 also reported errors relating to only one distinct vertex for a polyline. File D001C006 had many such reported errors.

Bulletin 20009: Element Class/ID: 4/1   Offset: 1962 octets Element No. 118
Warning; POLYLINE with only one distinct vertex.

File D001C010 was reported as not meeting the CALS MIL-D-28003 specification. The reported error is an invalid edge type.

Error 6527: Element Class/ID: 5/27   Offset: 5172 octets Element No. 351 The Edge
Type is invalid; it must have a value between 1 and 5.

All files were viewed using ATC's *MetaVIEW*. All files displayed on the screen. Files D001C004, and D001C008 thru D001C012 had reported errors during this process. Shown below is the error log from file D001C004. Because of the white background, white text on some files was not displayed.

System Error: Error -1018 in function 14.
            cl/id: 4/4, offs: 942, esqn: 71
System Error: Error -1018 in function 14.
            cl/id: 4/4, offs: 1374, esqn: 103
Error detected in file \9290\C004.CGM

All files were evaluated using the AFCTN *validcgm* utility.
This tool reported that all files were in error.

All files were converted using ArborText's *cgm2draw* utility.
No errors were reported during the conversion process. The
resulting files were read into Island Graphics' *IslandDraw*.
All files displayed on the screen. All files were displayed
with a white background, which had to be changed. When an
attempt to print the files was made, nothing generated.
Because these files could not be used in the ArborText
application, the document could not be printed. Three of
the files were converted to another format and printed on
another system. The results were not acceptable on two for
the three files. Hard copies are included in the Appendix
to this report.

All files were converted using the Island Graphics' *Island-
Draw* program. No errors were noted during this process.
All eight files displayed and printed. File D001C008 was
not acceptable either on the screen nor printed, as only a
very small part of the image was displayed. All files were
initially displayed with a patterned background. When this
was removed some of the text disappeared because of the
white background and white letters. Hard copies are in-
cluded in the Appendix to this report.

All files were imported into SPC's *Harvard Graphics v3.05*.
All files, with the exception of D001C011, were converted
with reported errors. The errors were line style errors
and/or object not translated. None of the imported files
were usable. Hard copies are included in the Appendix to
this report.

An attempt was made to convert the CGM files to IMG format
using Inset Systems' *HiJaak*. Each file generated an er-
ror message and none of the files would convert. File C006
and C008 hung up the system requiring a reboot.

An attempt was made to convert the files using Corel's
Ventura Publisher. Files C005 thru C008 converted without a
reported error. The remaining files contained an error
message of "file not correct," and would not convert. While
trying to move the four files into a document, file C008
cause *Ventura Publisher* to crash, dropping the system back
to the prompt. File C005 and C006 were imported and
printed. The results were not acceptable with nothing

recognizable being displayed and printed. See the Appendix
for the hard copy.

The CGM files do not meet the CALS MIL-D-28003 specifica-
tion.

8. Conclusions and Recommendations

In summary, the physical structure of the tape from Northrop Corporation does not meet the CALS MIL-STD-1840A requirements. The incorrect blocking factor for the CGM files may cause problems with some systems.

The DTD provided on the tape had several errors. Some of the minor errors were corrected. The major errors relate to use of non defined tags. The SGML files do not meet the CALS MIL-M-28001A specification.

The Raster file meets the CALS MIL-R-28002A specification. The type II Raster file was not evaluated by the AFCTB.

The CGM files handled from good to poor on the various CGM tools available in the AFCTB. They do not meet the CALS MIL-D-28003 specification.

The tape does not meet the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release Number 8

```
Standards referenced:
  MIL-STD-1840A (1987) - Automated Interchange of Technical Information
  MIL-R-28003 (1988) - Digital Representation For Communication Of
                       Illustration Data; CGM Application Profile
  ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
                      for Information Interchange
  ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII
```

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MIL-STD-1840A File Catalog

File Set Directory: /cals/tapetool8/Set111

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D002	Document Declaration	D/00260	02048/000001	Extracted
D001T001	Text	D/00260	02048/000001	Extracted
D001G002	DTD	D/00260	02048/000034	Extracted
D001H003	Output Specification	D/00260	02048/000004	Extracted
D001C004	CGM	F/00080	02000/000003	Extracted

```
*** ERROR (MIL-D-28003; 3.1.5) - Invalid Block Size:
    Header => 02000, Expected => 800
```

| D001C005 | CGM | F/00080 | 02000/000001 | Extracted |

```
*** ERROR (MIL-D-28003; 3.1.5) - Invalid Block Size:
    Header => 02000, Expected => 800
```

<<<<< PART OF LOG REMOVED HERE >>>>>

D002T001	Text	D/00260	02048/000001	Extracted
D002G002	DTD	D/00260	02048/000034	Extracted
D002H003	Output Specification	D/00260	02048/000004	Extracted
D002R004	Raster	F/00128	02048/000016	Extracted
D002R005	Raster	F/00128	02048/000008	Extracted

Catalog Process terminated with 8 error(s), 0 warning(s), and 0 note(s).

9.2   Tape Evaluation Log

Air Force CALS Test Network Tape Evaluation - Version 1.2; Release Number 8
  Standards referenced:
    ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Thu Dec 17 16:17:17 1992

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1ITDS01   CONTROLLER   4

  Label Identifier: VOL1
  Volume Identifier: ITDS01
  Volume Accessibility:
  Owner Identifier:
  Label Standard Version: 4

*** ERROR (ANSI X3.27; 8.3.1.1) - Columns 12-24 are reserved
    for future standardization and must be spaces.

HDR1D001   ITDS0100010001000100 92339 92339 000000   CONTROLLER

  Label Identifier: HDR1
  File Identifier: D001
  File Set Identifier: ITDS01
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0001
  Generation Version Number: 00
  Creation Date: 92339
  Expiration Date: 92339
  File Accessibility:
  Block Count: 000000
  Implementation Identifier: CONTROLLER

HDR2D0204800260   00

  Label Identifier: HDR2
  Recording Format: D
  Block Length: 02048

Record Length: 00260
Offset Length: 00

************ Tape Mark ***************

 Actual Block Size Found = 2048 Bytes.

 Number of data blocks read = 1.

************ Tape Mark ***************

EOF1D001   ITDS0100010001000100 92339 92339 000001   CONTROLLER

   Label Identifier: EOF1
   File Identifier: D001
   File Set Identifier: ITDS01
   File Section Number: 0001
   File Sequence Number: 0001
   Generation Number: 0001
   Generation Version Number: 00
   Creation Date: 92339
   Expiration Date: 92339
   File Accessibility:
   Block Count: 000001
   Implementation Identifier: CONTROLLER

EOF2D0204800260   00

   Label Identifier: EOF2
   Recording Format: D
   Block Length: 02048
   Record Length: 00260
   Offset Length: 00

************ Tape Mark ***************

                    <<<<< *PART OF LOG REMOVED HERE* >>>>>

************ Tape Mark ***************

HDR1D002R005   ITDS0100010018000100 92339 92339 000000   CONTROLLER

   Label Identifier: HDR1
   File Identifier: D002R005
   File Set Identifier: ITDS01
   File Section Number: 0001
   File Sequence Number: 0018
   Generation Number: 0001

Generation Version Number: 00
Creation Date: 92339
Expiration Date: 92339
File Accessibility:
Block Count: 000000
Implementation Identifier: CONTROLLER

HDR2F0204800128   00

  Label Identifier: HDR2
  Recording Format: F
  Block Length: 02048
  Record Length: 00128
  Offset Length: 00

************ Tape Mark ***************

  Actual Block Size Found = 2048 Bytes.

  Number of data blocks read = 8.

************ Tape Mark ***************

EOF1D002R005   ITDS0100010018000100 92339 92339 000008   CONTROLLER

  Label Identifier: EOF1
  File Identifier: D002R005
  File Set Identifier: ITDS01
  File Section Number: 0001
  File Sequence Number: 0018
  Generation Number: 0001
  Generation Version Number: 00
  Creation Date: 92339
  Expiration Date: 92339
  File Accessibility:
  Block Count: 000008
  Implementation Identifier: CONTROLLER

EOF2F0204800128   00

  Label Identifier: EOF2
  Recording Format: F
  Block Length: 02048
  Record Length: 00128
  Offset Length: 00

************ Tape Mark ***************

************ Tape Mark ***************

############ End of Volume ITDS01 #############

############ End Of Tape File Set #############

Deallocating /dev/rmt0...

Tape Import Process terminated with 1 error(s), 0 warning(s),
and 0 note(s).

9.3 Tape File Set Validation Log

Air Force CALS Test Network File Set Evaluation - Version 1.2; Release Number 8
  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information
    MIL-R-28002 (1989) - Raster Graphics Representation In Binary
                         Format, Requirements For

Thu Dec 17 16:17:34 1992

MIL-STD-1840A File Set Evaluation Log

File Set: Set111

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division, L591/GK
srcdocid: CALS_CGM_TEST
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19921204
dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT, Techne
dstdocid: CALS_CGM_TEST1
dstrelid: NONE
dtetrn: 19921204
dlvacc: NONE
filcnt: T1, H1, G1, C8
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: JOB GUIDE
docttl: graphics test

Found file: D001T001
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: CALS_CGM_TEST
dstdocid: CALS_CGM_TEST1
txtfilid: W
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T001_HDR
Saving Text Data File: D001T001_TXT

```
Found file: D001G002
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: CALS_CGM_TEST
dstdocid: CALS_CGM_TEST1
notes: NONE

Saving DTD Header File: D001G002_HDR
Saving DTD Data File: D001G002_DTD

Found file: D001H003
Extracting Output Specification Header Records...
Evaluating Output Specification Header Records...

srcdocid: CALS_CGM_TEST
dstdocid: CALS_CGM_TEST1
notes: NONE

Saving Output Specification Header File: D001H003_HDR
Saving Output Specification Data File: D001H003_OS

Found file: D001C004
Extracting CGM Header Records...
Evaluating CGM Header Records...

srcdocid: CALS_CGM_TEST
dstdocid: CALS_CGM_TEST1
txtfilid: W
figid: NONE
srcgph: allreal.cgm
doccls: UNCLASSIFIED
notes: NONE

Saving CGM Header File: D001C004_HDR
Saving CGM Data File: D001C004_CGM
```

<<<<< *PART OF LOG REMOVED HERE* >>>>>

```
Found file: D001C011
Extracting CGM Header Records...
Evaluating CGM Header Records...

srcdocid: CALS_CGM_TEST
dstdocid: CALS_CGM_TEST1
txtfilid: W
figid: NONE
```

```
srcgph: text.cgm
doccls: UNCLASSIFIED
notes: NONE

Saving CGM Header File: D001C011_HDR
Saving CGM Data File: D001C011_CGM

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

Found file: D002
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division, L591/GK
srcdocid: CALS_RAS_TEST
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19921204
dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT, Techne
dstdocid: CALS_RAS_TEST1
dstrelid: NONE
dtetrn: 19921204
dlvacc: NONE
filcnt: T1, H1, G1, R2
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: JOB GUIDE
docttl: graphics test

Found file: D002T001
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: CALS_RAS_TEST
dstdocid: CALS_RAS_TEST1
txtfilid: W
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D002T001_HDR
```

Saving Text Data File: D002T001_TXT

Found file: D002G002
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: CALS_RAS_TEST
dstdocid: CALS_RAS_TEST1
notes: NONE

Saving DTD Header File: D002G002_HDR
Saving DTD Data File: D002G002_DTD

Found file: D002H003
Extracting Output Specification Header Records...
Evaluating Output Specification Header Records...

srcdocid: CALS_RAS_TEST
dstdocid: CALS_RAS_TEST1
notes: NONE

Saving Output Specification Header File: D002H003_HDR
Saving Output Specification Data File: D002H003_OS

Found file: D002R004
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: CALS_RAS_TEST
dstdocid: CALS_RAS_TEST1
txtfilid: W
figid: NONE
srcgph: test1.ras
doccls: UNCLASSIFIED
rtype: 1
rorient: 090,270
rpelcnt: 001728,002200
rdensty: 0200
notes: NONE

Saving Raster Header File: D002R004_HDR
Saving Raster Data File: D002R004_GR4

Found file: D002R005
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: CALS_RAS_TEST

dstdocid: CALS_RAS_TEST1
txtfilid: W
figid: NONE
srcgph: test2.ras
doccls: UNCLASSIFIED
rtype: 2
rorient: 000,270
rpelcnt: 002560,003584
rdensty: 0300
notes: NONE

Saving Raster Header File: D002R005_HDR
Saving Raster Data File: D002R005_GR4

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D002.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

10. Appendix B - Detailed SGML Analysis

10.1 Exoterica Parser - D001G001

```
C:\XGML\XGMLNORM.EXE --
Error on line 463 in file entities/north90a.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "BRANCHSTYLEID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 498 in file entities/north90a.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "DOC".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 519 in file entities/north90a.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "VIEWSTYLEID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 1140 in file entities/north90a.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "EXTREFID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 1153 in file entities/north90a.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "GRAPHSTYID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 1369 in file entities/north90a.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "TABSTYLEID".
Expecting to see a declared value next.
```

```
C:\XGML\XGMLNORM.EXE --
Error on line 1390 in file entities/north90a.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "SUBSETSTYLEID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 1473 in file entities/north90a.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "SUBSETSTYLEID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 82 in file north90a.sgm:
An ENTITY declaration referred to an undeclared notation.
For entity 'allreal.cgm', notation 'CGM'.
```

<<<<< REMAINDER OF LOG REMOVED >>>>>

10.1.1 Exotercia Parser Log - D002G001

```
C:\XGML\XGMLNORM.EXE --
Error on line 457 in file entities/north90b.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "BRANCHSTYLEID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 492 in file entities/north90b.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "DOC".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 513 in file entities/north90b.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "VIEWSTYLEID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 1134 in file entities/north90b.dtd:
```

```
Syntax error.
Error in attribute definition.
The last text seen was "EXTREFID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 1147 in file entities/north90b.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "GRAPHSTYID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 1363 in file entities/north90b.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "TABSTYLEID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 1384 in file entities/north90b.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "SUBSETSTYLEID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 1467 in file entities/north90b.dtd:
Syntax error.
Error in attribute definition.
The last text seen was "SUBSETSTYLEID".
Expecting to see a declared value next.

C:\XGML\XGMLNORM.EXE --
Error on line 72 in file north90b.sgm:
An ENTITY declaration referred to an undeclared notation.
For entity 'test2.ras', notation 'RAS'.

C:\XGML\XGMLNORM.EXE --
Error on line 72 in file north90b.sgm:
An ENTITY declaration referred to an undeclared notation.
For entity 'test1.ras', notation 'RAS'.
<!-- The document prolog is in error. -->
```

11. Appendix C - Detailed Raster Analysis

11.1 File D002R004

11.1.1 Output g42tiff/IslandPaint

U.S. ARMY MATERIEL COMMAND U.S. ARMY MISSILE COMMAND REDSTONE ARSENAL, ALABAMA						PARTS LIST			PL 10677287 CODE IDENTIFICATION NO. 18876			
TITLE OSCILLATOR,VOLTAGE CONTROLLED-COHO-A3A13			USAMICOM ECP 63343		DATE 16 NOV 70 REV -			SHEET 3 OF				
FIND NO.	PART OR IDENTIFICATION NO.	DRAWING OR SPECIFICATION NO.	NOMENCLATURE	QUANTITY	PL	MI	EFFECTIVITY		ZONE	NOTES OR REMARKS
							FROM	TO		
	10181751-207	10181751	RESISTOR							
	10181751-208	10181751	RESISTOR							
	10181751-209	10181751	RESISTOR							
	10181751-210	10181751	RESISTOR							
	10181751-211	10181751	RESISTOR							
	10181751-212	10181751	RESISTOR							
	10181751-213	10181751	RESISTOR							
	10181751-214	10181751	RESISTOR							
	10181751-215	10181751	RESISTOR							
2	10181752-261	10181752	RESISTOR	1						
3	10181752-357	10181752	RESISTOR	1						
4	10181751-147	10181751	RESISTOR	2						
5	10180306-239	10180306	RESISTOR	2						
6	10181751-133	10181751	RESISTOR	1						
7	10181751-166	10181751	RESISTOR	1						
8	10180328-418	10180328	RESISTOR	1						
9	10181752-285	10181752	RESISTOR	1						
10	10181752-298	10181752	RESISTOR	1						
11	10181752-306	10181752	RESISTOR	1						
12	10181752-297	10181752	RESISTOR	1						
13	10181752-289	10181752	RESISTOR	1						
14	10181752-271	10181752	RESISTOR	1						
15	10181752-310	10181752	RESISTOR	1						
16	10181751-55	10181751	RESISTOR	1						1
	10181751-1	10181751	RESISTOR							
	10181751-2	10181751	RESISTOR							
	10181751-3	10181751	RESISTOR							
	10181751-4	10181751	RESISTOR							
	10181751-5	10181751	RESISTOR							
	10181751-6	10181751	RESISTOR							

SA FORM 1998, AUG. 1983

*OPTIONAL

11.1.2 Output IGESView

U.S. ARMY MATERIEL COMMAND U.S. ARMY MISSILE COMMAND REDSTONE ARSENAL, ALABAMA			PARTS LIST			PL 10677287 CODE IDENTIFICATION NO. 18876				
TITLE OSCILLATOR, VOLTAGE CONTROLLED-COMO-A3A13		USAMICOM 63343 ECP	DATE 16 NOV 70 REV — SHEET 3 OF							
FIND NO.	PART OR IDENTIFICATION NO.	DRAWING OR SPECIFICATION NO.	NOMENCLATURE	QUANTITY	PL	MI	EFFECTIVITY * FROM	TO	ZONE*	NOTES OR REMARKS
	10181751-207	10181751	RESISTOR							
	10181751-208	10181751	RESISTOR							
	10181751-209	10181751	RESISTOR							
	10181751-210	10181751	RESISTOR							
	10181751-211	10181751	RESISTOR							
	10181751-212	10181751	RESISTOR							
	10181751-213	10181751	RESISTOR							
	10181751-214	10181751	RESISTOR							
	10181751-215	10181751	RESISTOR							
2	10181752-261	10181752	RESISTOR	1						
3	10181752-357	10181752	RESISTOR	1						
4	10181751-147	10181751	RESISTOR	1						
5	10180306-239	10180306	RESISTOR	2						
6	10181751-133	10181751	RESISTOR	1						
7	10181751-166	10181751	RESISTOR	1						
8	10180328-418	10180328	RESISTOR	1						
9	10181752-283	10181752	RESISTOR	1						
10	10181752-298	10181752	RESISTOR	1						
11	10181752-306	10181752	RESISTOR	1						
12	10181752-297	10181752	RESISTOR	1						
13	10181752-289	10181752	RESISTOR	1						
14	10181752-271	10181752	RESISTOR	1						
15	10181752-310	10181752	RESISTOR	1						
16	10181751-55	10181751	RESISTOR	1						1
	10181751-1	10181751	RESISTOR							
	10181751-2	10181751	RESISTOR							
	10181751-3	10181751	RESISTOR							
	10181751-4	10181751	RESISTOR							
	10181751-5	10181751	RESISTOR							
	10181751-6	10181751	RESISTOR							

11.1.3 Output Preview

U.S. ARMY MATERIEL COMMAND
U.S. ARMY MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA

TITLE: OSCILLATOR,VOLTAGE CONTROLLED-COHO-A3A13

USAMICOM ECP 63343 — DATE 16 NOV 70 REV

PARTS LIST — PL 10677287 — CODE IDENTIFICATION NO. 18876 — SHEET - 3 OF

FIND NO.	PART OR IDENTIFICATION NO.	DRAWING OR SPECIFICATION NO.	NOMENCLATURE	QUANTITY	NOTES OR REMARKS
1	10181751-207	10181751	RESISTOR		
	10181751-208	10181751	RESISTOR		
	10181751-209	10181751	RESISTOR		
	10181751-210	10181751	RESISTOR		
	10181751-211	10181751	RESISTOR		
	10181751-212	10181751	RESISTOR	1	
	10181751-213	10181751	RESISTOR	1	
	10181751-214	10181751	RESISTOR	2	
	10181751-215	10181751	RESISTOR	1	
2	10181752-261	10181752	RESISTOR	1	
3	10181752-357	10181752	RESISTOR	1	
4	10181751-147	10181751	RESISTOR	1	
5	10180306-239	10180306	RESISTOR	1	
6	10181751-133	10181751	RESISTOR	1	
7	10181751-166	10181751	RESISTOR		
8	10180328-418	10180328	RESISTOR	1	
9	10181752-283	10181752	RESISTOR	1	
10	10181752-298	10181752	RESISTOR	1	
11	10181752-306	10181752	RESISTOR	1	
12	10181752-297	10181752	RESISTOR		
13	10181752-289	10181752	RESISTOR	1	
14	10181752-271	10181752	RESISTOR	1	
15	10181752-310	10181752	RESISTOR	1	
16	10181751-55	10181751	RESISTOR		
	10181751-1	10181751	RESISTOR		
	10181751-2	10181751	RESISTOR		
	10181751-3	10181751	RESISTOR		
	10181751-4	10181751	RESISTOR		
	10181751-5	10181751	RESISTOR		
	10181751-6	10181751	RESISTOR		

11.1.4   Output Ventura Publisher

D002R004

D002R005

12. Appendix E - Detailed CGM Analysis

12.1 File D001C006

12.1.1 Parser Log MetaCheck

```
MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 12/18/92     Time:  08:36:24

Metafile Examined      : \9290\c006

Pictures Examined      : All
Elements Examined      : All
Bytes     Examined      : All

======================= Trace Report ========================

Tracing not selected.

============= CGM Conformance Violation Report ==============

Bulletin 20024: Element Class/ID: 5/34   Offset: 172 octets Element No. 19
Warning; the definition of color index 0 differs from the
explicitly defined Background Color.

Bulletin 20009: Element Class/ID: 4/1    Offset: 1962 octets Element No. 118
Warning; POLYLINE with only one distinct vertex.

Bulletin 20009: Element Class/ID: 4/1    Offset: 2016 octets Element No. 121
Warning; POLYLINE with only one distinct vertex.

            <<<<< PART OF LOG REMOVED HERE >>>>>

Bulletin 20009: Element Class/ID: 4/1    Offset: 64512 octets Element No. 3593
Warning; POLYLINE with only one distinct vertex.

========== CALS CGM Profile (MIL-D-28003) Report ============

No profile discrepancies detected.

================ Conformance Summary Report ================

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
```

Execution Date: 12/18/92   Time: 08:36:34

Name of CGM under test: \9290\c006.cgm
Encoding   : Binary

Pictures Examined   : All
Elements Examined   : All
Bytes   Examined   : All

BEGIN METAFILE string : "f18.cgm"
METAFILE DESCRIPTION : "NORTHROP B2 ITDS GEF, MIL-D-28003/BASIC-1"

Picture 1 starts at octet offset 128; string contains: "Picture 1"

Conformance Summary   : This file conforms to the CGM specification.
                         This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

        1 Pictures Tested
     3651 Elements Tested
    65542 Octets Tested

    0 Illegal CGM Elements   1000 -   1999
    0 Incorrect CGM Element Lengths   2000 -   2999
    0 CGM State Errors   3000 -   3499
    0 Required CGM Elements Missing or Wrong   4000 -   4499
    0 CGM Parameter Values Out of Range   6000 -   6499
    0 CGM Structure Errors   7000 -   7499
    0   ***   CGM Errors Found (total)   ***

    0 Profile State Errors   3500 -   3999
    0 Illegal Profile Elements   4500 -   4999
    0 Profile Parameter Values Out of Range   6500 -   6999
    0 Profile Data Limits Exceeded   8500 -   8999
    0 Other Profile Constraints Violated   9500 -   9999
    0   *** Profile Violations Found (total) ***

  103 Warnings (Advisory Remarks)   20000 - 20999

      2 distinct errors and warnings were reported.
================= End of Conformance Report ==================

12.1.2   validcgm LOG

```
Analysis for file c006.cgm using table table
ERROR: illegal in this state (2), std B
ERROR: required precursor (0, 4) not yet seen
(13.1, 0)          (3, 6, 2)       Clip Indicator OFF
(0, 1) occurred 1 time
(0, 2) occurred 1 time
(0, 3) occurred 1 time
(0, 4) occurred 1 time
(0, 5) occurred 1 time
(1, 1) occurred 1 time
(1, 2) occurred 1 time
(1, 3) occurred 1 time
(1, 4) occurred 1 time
(1, 5) occurred 1 time
(1, 6) occurred 1 time
(1, 7) occurred 1 time
(1, 8) occurred 1 time
(1, 9) occurred 1 time
(1, 10) occurred 1 time
(1, 11) occurred 1 time
(1, 12) occurred 1 time
(2, 2) occurred 1 time
(2, 6) occurred 1 time
(2, 7) occurred 1 time
(3, 2) occurred 1 time
(3, 6) occurred 1 time
(3, 6) occurred illegally 1 time
(4, 1) occurred 3627 times
(5, 2) occurred 1 time
(5, 3) occurred 1 time
(5, 4) occurred 1 time
(5, 34) occurred 1 time
```
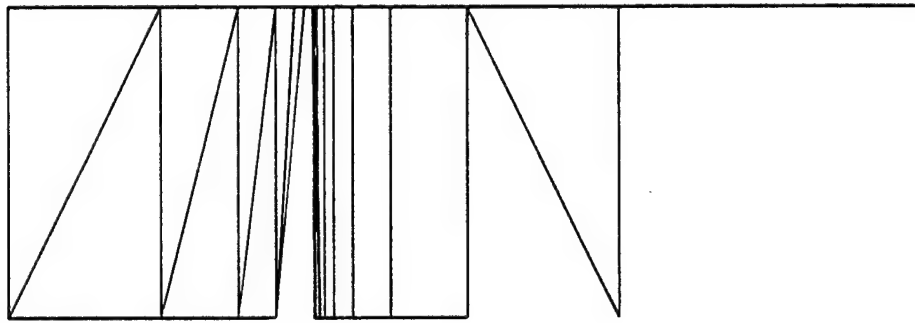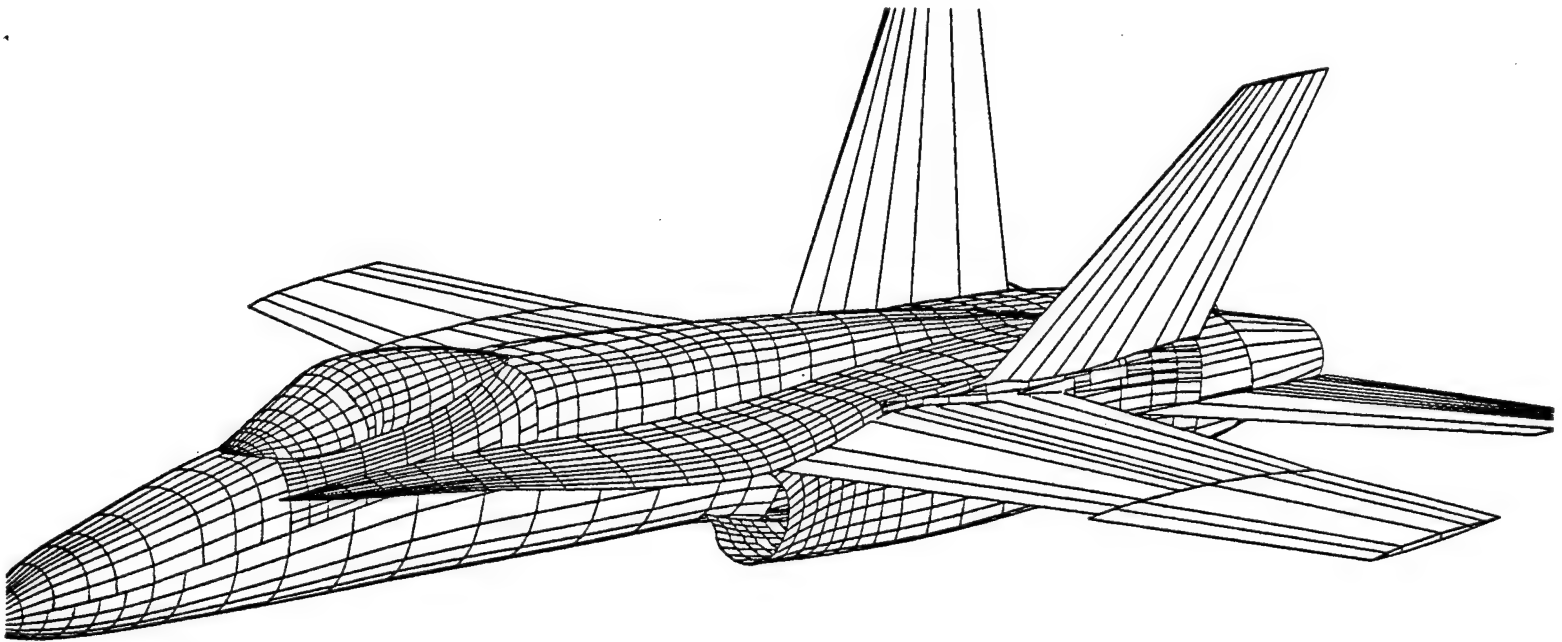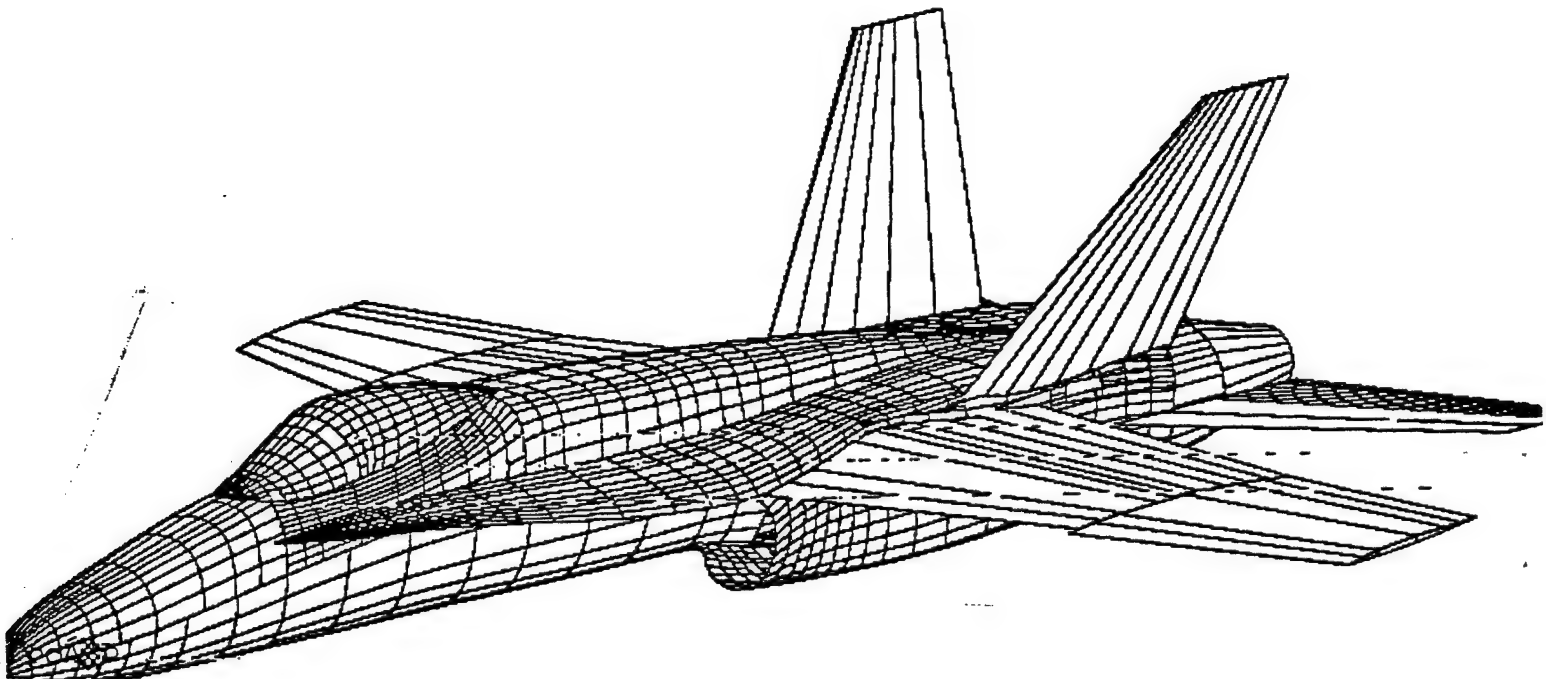
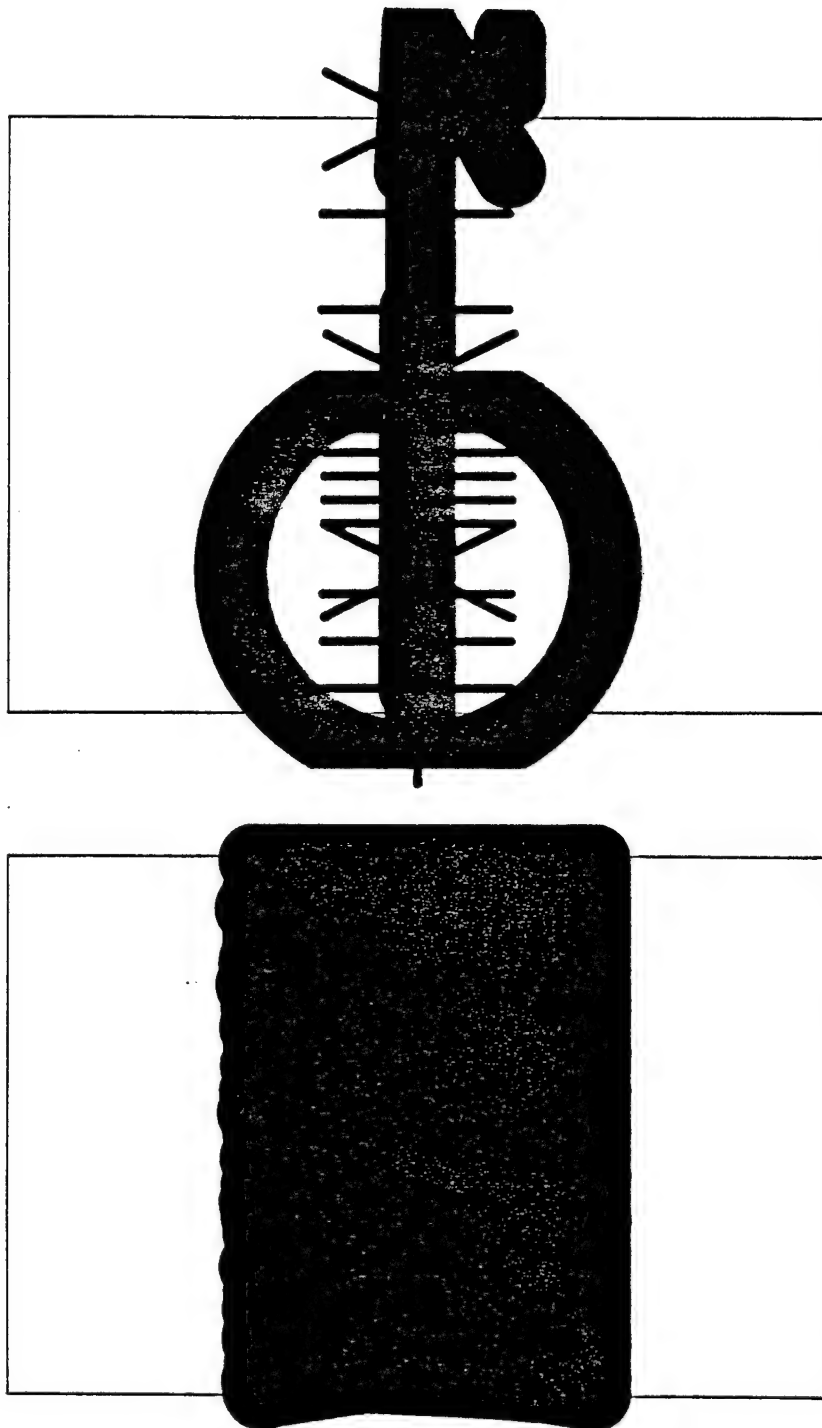## 12.1.3 Output Harvard Graphics

HG305
D001C006

12.1.4   Output IslandDraw

12.1.5 Output cgm2draw/IslandDraw

12.1.6 Output Ventura Publisher

12.2   File D001C009

12.2.1   Parser Log MetaCheck

```
MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 12/18/92     Time:  08:37:00

Metafile Examined     : \9290\c009

Pictures Examined     : All
Elements Examined     : All
Bytes     Examined     : All


======================= Trace Report ========================

Tracing not selected.

============== CGM Conformance Violation Report ==============

Bulletin 20024: Element Class/ID: 5/34   Offset: 196 octets Element No. 20
Warning; the definition of color index 0 differs from the
explicitly defined Background Color.

Bulletin 20009: Element Class/ID: 4/1   Offset: 9398 octets Element No. 532
Warning; POLYLINE with only one distinct vertex.

=========== CALS CGM Profile (MIL-D-28003) Report ============

No profile discrepancies detected.

================= Conformance Summary Report =================

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 12/18/92     Time:  08:37:07

Name of CGM under test: \9290\c009.cgm
Encoding               : Binary

Pictures Examined     : All
Elements Examined     : All
Bytes     Examined     : All

BEGIN METAFILE string : "sel.cgm"
METAFILE DESCRIPTION   : "NORTHROP B2 ITDS GEF, MIL-D-28003/BASIC-1"
```

Picture 1 starts at octet offset 152; string contains: "Picture 1"

Private values encountered in CGM

Conformance Summary : This file conforms to the CGM specification.
This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

```
        1 Pictures Tested
     1860 Elements Tested
    57502 Octets Tested
```

```
    0 Illegal CGM Elements                     1000 -  1999
    0 Incorrect CGM Element Lengths            2000 -  2999
    0 CGM State Errors                         3000 -  3499
    0 Required CGM Elements Missing or Wrong   4000 -  4499
    0 CGM Parameter Values Out of Range        6000 -  6499
    0 CGM Structure Errors                     7000 -  7499
    0     ***     CGM Errors Found (total)    ***
```

```
    0 Profile State Errors                     3500 -  3999
    0 Illegal Profile Elements                 4500 -  4999
    0 Profile Parameter Values Out of Range    6500 -  6999
    0 Profile Data Limits Exceeded             8500 -  8999
    0 Other Profile Constraints Violated       9500 -  9999
    0     *** Profile Violations Found (total) ***
```

```
    2 Warnings (Advisory Remarks)             20000 - 20999
```

2 distinct errors and warnings were reported.

================ End of Conformance Report ==================
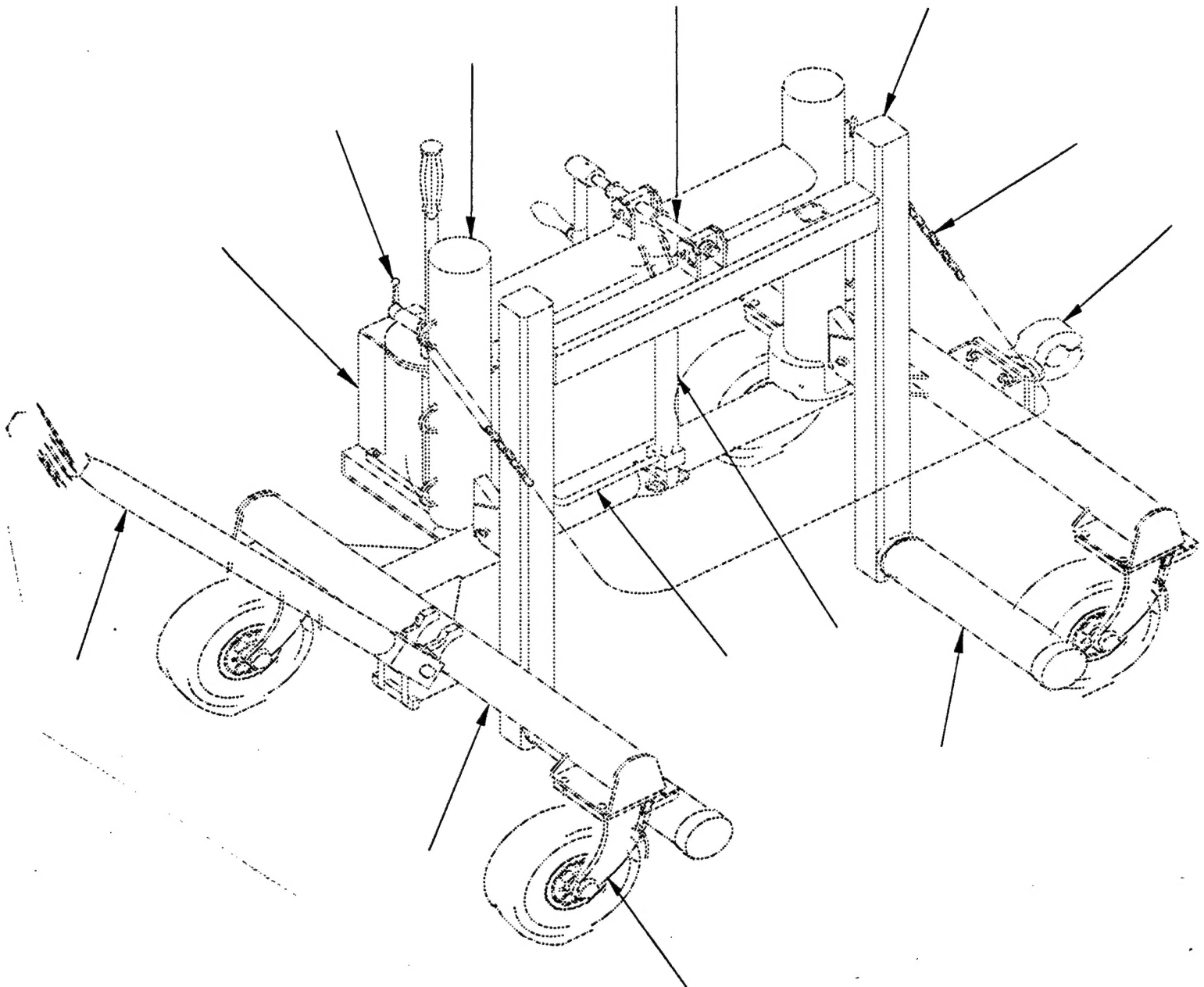
12.2.2 validcgm LOG

```
Analysis for file c009.cgm using table table
ERROR: illegal in this state (2), std B
ERROR: required precursor (0, 4) not yet seen
(14.1, 0)          (3, 6, 2)       Clip Indicator OFF
(0, 1) occurred 1 time
(0, 2) occurred 1 time
(0, 3) occurred 1 time
(0, 4) occurred 1 time
(0, 5) occurred 1 time
```

```
(1,  1)  occurred 1 time
(1,  2)  occurred 1 time
(1,  3)  occurred 1 time
(1,  4)  occurred 1 time
(1,  5)  occurred 1 time
(1,  6)  occurred 1 time
(1,  7)  occurred 1 time
(1,  8)  occurred 1 time
(1,  9)  occurred 1 time
(1, 10)  occurred 1 time
(1, 11)  occurred 1 time
(1, 12)  occurred 1 time
(1, 13)  occurred 1 time
(2,  2)  occurred 1 time
(2,  6)  occurred 1 time
(2,  7)  occurred 1 time
(3,  2)  occurred 1 time
(3,  6)  occurred 1 time
(3,  6)  occurred illegally 1 time
(4,  1)  occurred 830 times
(4,  4)  occurred 27 times
(4,  7)  occurred 13 times
(4, 15)  occurred 122 times
(4, 17)  occurred 50 times
(4, 18)  occurred 407 times
(5,  2)  occurred 52 times
(5,  3)  occurred 52 times
(5,  4)  occurred 52 times
(5, 10)  occurred 1 time
(5, 12)  occurred 1 time
(5, 13)  occurred 1 time
(5, 14)  occurred 1 time
(5, 15)  occurred 4 times
(5, 16)  occurred 4 times
(5, 17)  occurred 1 time
(5, 18)  occurred 1 time
(5, 22)  occurred 45 times
(5, 23)  occurred 3 times
(5, 27)  occurred 42 times
(5, 28)  occurred 42 times
(5, 29)  occurred 42 times
(5, 30)  occurred 45 times
(5, 34)  occurred 1 time
```

12.2.3 Output Harvard Graphics

HG305
D001C009

12.2.4 Output IslandDraw

12.2.5 Output cgm2draw/IslandDraw